

WHAT IS CLAIMED IS:

1. First and second feedback equalizer signals for controlling a decision feedback equalizer, wherein the first feedback equalizer signal is delayed by an implementation delay and
5 wherein the second feedback equalizer signal is free of the implementation delay.

2. A decision feedback equalizer (DFE), comprising:

a forward equalizer;

first and second adders;

10 a decision device;

a feedback equalizer; and

an N-tap filter,

wherein:

the first and second adders, the decision device and the feedback equalizer constitute a
15 first feedback loop;

the second adder, the decision device, and the N-tap filter constitute a second feedback
loop;

the second feedback loop is free of an implementation delay associated with the first
feedback loop; and

20 N is a positive integer.

3. The DFE as recited in claim 2, wherein the N-tap filter is implemented in fast logic.

4. A digital television receiver including the DFE as recited in claim 2.

5. A decision feedback equalizer (DFE), comprising:

a forward equalizer;

a decision device;

filter means for generating a first feedback signal responsive to first filter coefficients adapted to process postcursor echoes adjacent to the main channel and a second feedback signal responsive to second filter coefficients adapted to process all other postcursor echoes; and

means for applying the first and second feedback signals to thereby control the DFE.

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6. The DFE as recited in claim 5, wherein the number of second filter coefficients is much greater than the number of first filter coefficients.

7. A digital television receiver including the DFE as recited in claim 5.

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8. A method for controlling a decision feedback equalizer (DFE) including a forward equalizer and a decision device, comprising:

generating a first feedback signal responsive to first filter coefficients adapted to process postcursor echoes adjacent to the main channel;

generating a second feedback signal responsive to second filter coefficients adapted to process all other postcursor echoes; and

applying the first and second feedback signals to thereby control the DFE.

9. The method as recited in claim 8, wherein:

the decision device is common to first and second feedback loops; and

the applying step further comprises:

applying the first and second feedback signals to the first and second feedback loops, respectively, to thereby control the DFE.